## Index to Volume 30

Numbers prefixed by S are Astrophysical Supplement numbers

Abraham-Lorentz equation, generalization of Boldeman, J. W .energy integral for 675 See Musgrove, A. R. de L. Acharya, Rama, and Man Mohan-Bolotin, H. H.-An improved calculation of the multiphoton See Heggie, J. C. P. 407 bremsstrahlung process in the presence Bolton, J. G .of a laser beam 33 See Savage, Ann S44 Achuthan, P .-Wright, Alan E. S41 See Chandramohan, T. 577 Bolton, J. G., and Savage, Ann-Allen, B. J .-New optical identifications from the See Kenny, M. J. 591, 605 twelfth part of the Parkes 2700 MHz Musgrove, A. R. de L. 391, 599 survey: declinations -45° to -65°, Amos, K .right ascensions 22h to 06h S41 See Gabric, A. 287 Abstracts to S41 Argon: 35Ar(B+)35Cl decay and New optical identifications from the anomalous Cabbibo angle thirteenth part of the Parkes 2700 MHz Argon, electron drift velocities in survey: declinations  $-15^{\circ}$  to  $-30^{\circ}$ , Argon, momentum transfer cross section for right ascensions 10h to 15h electrons in 61 Abstracts to \$44 Argon, ratio of lateral diffusion coefficient to Bowick, M. J .mobility for electrons in 51 See Wybourne, B. G. 259 Bremsstrahlung, multiphoton, cross section Astronomy calculation for 33 Optical identifications of radio sources Burman, R. R. from Molonglo catalogues MC2 and Generalized Ohm's laws for relativistically MC3 S42 Optical identifications of radio sources streaming plasmas 471 from Parkes 2700 MHz survey S41, S44 See also Radio astronomy Cadmium: vibrational excitations in even-mass isotopes 133 Astrophysics Calcium: study of 42Ca(p, 7)43Sc Emission and absorption of Langmuir reaction 417 waves by anisotropic unmagnetized Carbon: 12C+16O elastic scattering and total particles 481 reaction cross sections near Coulomb Mode coupling in solar barrier 149 corona 495, 647, 661 Chakrabarti, S. N .-See Baneriee, S. N. 361 Banerjee, A., and Dutta Choudhury, S. B .-Chandramohan, T., Venkatesan, K., and On space-like geodesics in two special Achuthan, P .gravitational fields 251 Photoproduction of pion pairs at Banerjee, S. N., and Chakrabarti, S. N.moderate energies Nuclear structure of 12C from an Chaplin, D. H .α-particle model 361 See Wilson, G. V. H. Barker, F. C. Chlorine: 35Ar(β+)35Cl decay and 2 states of 8Be anomalous Cabbibo angle 365 Baxter, A. M .-Chromium photoneutron cross section See Spear, R. H. Clayton, E., Cook, J. L., and Rose, E. K.-Beale, D. J.-Local and nonlocal potentials for low See Southon, J. R. Beryllium: 2<sup>-</sup> states of <sup>8</sup>Be energy pion-nucleon scattering 113 Bhattacharyya, S., and De, S. N .-Clayton, E., and Derrick, G. H .-

A numerical solution of wave equations

for real or complex eigenvalues

Surface waves in viscoelastic media under

the influence of gravity

Cole, K. D .-

Generalization of Planck's law of radiation to anisotropic dispersive media 671

Cook, J. L.— See Clayton, E. 369

Cooke, P .-

See Wilson, G. V. H. 461

Crompton, R. W .-

See Milloy, H. B. 51, 61

Davis, J. R., and Din, G. U.— The <sup>11</sup>B(<sup>3</sup>He, n<sub>0</sub>)<sup>13</sup>N reaction 167 De. S. N.—

See Bhattacharyya, S. 347

Derrick, G. H.-

See Clayton, E. 15

Dewar, R. L.-

Energy-momentum tensors for dispersive electromagnetic waves 533

Din, G. U.-

See Davis, J. R. 167

Din, G. U., and Heusch, B .-

A study of the <sup>42</sup>Ca(p,  $\gamma$ )<sup>43</sup>Sc reaction 417 Dutta Choudhury, S. B.—

See Banerjee, A. 251

Electromagnetic waves, dispersive, energy-momentum tensors for

Esat, M. T .-

See Spear, R. H. 133

Fewell, M. P .-

See Spear, R. H. 133

Field, D. W .-

Mean square vibration amplitudes in zinc 105

Fluids: convection in layer subject to rotation and magnetic field 177

Fluids: effect of plate oscillations on horizontal free convection flow 335

Foster, H. R.-

See Wilson, G. V. H. 461

Francey, J. L. A., and Jones, D. A.—
The effect of inelastic collisions on diffusion coefficients for electron swarms 303

Gabric, A., and Amos, K .-

The optical model and proton elastic scattering from <sup>14</sup>N and <sup>16</sup>O 287

Gardner, F. F .-

See Whiteoak, J. B. 187

Gaseous electronics

Effect of inelastic collisions on diffusion coefficients 303

Electron drift velocities in argon at 293 and 90 K 39 Momentum transfer cross section for electrons in argon 61

Monte Carlo simulation of electron swarms in hydrogen 83

Ratio of lateral diffusion coefficient to mobility for electrons in argon at 294 K 51

Validity of two-term approximation in solution of Boltzmann's equation 7

Geophysics: surface waves in viscoelastic media under influence of gravity 347

Good, W. M .-

See Musgrove, A. R. de L. 379

Gravitation: plane symmetric solutions of scalar-tensor theory 109

Gravitation: space-like geodesics in two special fields 251

Green, H. S .-

Field theory of particles with arbitrary spin 1

Harvey, J. A .-

See Musgrove, A. R. de L. 379, 391

Hazard, C., and Murdoch, H. S .-

Optical identifications from the Molonglo catalogues MC2 and MC3. I. Right ascensions 11<sup>h</sup> 28<sup>m</sup> to 17<sup>h</sup> 00<sup>m</sup> S42
Abstract to S42 681

Heat and Thermodynamics

Cell sizes at onset of convection in fluid layer 177

Effect of plate oscillations on horizontal free convection 335

Theory of melting 631, 641

Heggie, J. C. P., and Bolotin, H. H.— Properties of the lowest T = 2 state in <sup>24</sup>Mg 407

Heusch, B .-

See Din, G. U. 417

Hinds, S.

See Spear, R. H. 133

Hoskins, D. G .-

See Mills, B. Y. 509

Hunter, S. R .-

Monte Carlo simulation of electron swarms in H<sub>2</sub> 83

Ionosphere: solar zenith angle dependence of sudden cosmic noise absorptions 53 Irvine, R. D.—

See Stacey, F. D. 631, 641

Jones, D. A .-

See Francey, J. L. A. 303

Joye, A. M. R.-

See Spear, R. H. 133

Kamran, Mujahid, and Saleem, Mohammad— Energy dependence of the dip in pp elastic scattering and the pomeron periphery 355

Kean, D. C .-

See Spear, R. H. 133

Kelly, J. C .-

See Price, P. B. 617

Kenny, M. J., and Allen, B. J .-

Gamma rays from keV neutron capture in lanthanum 591

Kenny, M. J., Allen, B. J., and Macklin, R. L.—

Resonant neutron capture in <sup>45</sup>Sc below 100 keV 605

Lanthanum: γ rays from keV neutron capture by <sup>139</sup>La 591

Lanthanum: resonant neutron capture in <sup>139</sup>La 599

Lie groups, exceptional, basic properties of 259

Lynam, P .-

See Wilson, G. V. H. 461

Macklin, R. L .--

See Kenny, M. J. 605 Musgrove, A. R. de L. 391, 599

Maclean, I. C.—

See Nagorcka, B. N. 149

Magnesium: properties of lowest T = 2 state in  $^{24}$ Mg 407

Man Mohan-

See Acharya, Rama 33

Melrose, D. B .-

Mode coupling in the solar corona.

III. Alfvén and magnetoacoustic waves 495

V. Reduction of the coupled equations 661

Melrose, D. B., and Simpson, M. A.— Mode coupling in the solar corona.

> IV. Magnetohydrodynamic waves 647

Melrose, D. B., and Stenhouse, J. E.— Emission and absorption of Langmuir waves by anisotropic unmagnetized particles 481

Milloy, H. B., and Crompton, R. W.— The ratio of the lateral diffusion coefficient to mobility for electrons in argon at 294 K 51

Milloy, H. B., Crompton, R. W., Rees, J. A., and Robertson, A. G.—

The momentum transfer cross section for electrons in argon in the energy range 0-4 eV 61

Milloy, H. B., and Watts, R. O.—
On the validity of the two-term approximation in the solution of Boltzmann's equation for electron motion 73

Mills, B. Y., and Hoskins, D. G.—
A radio study of Abell clusters 509

Muirhead, E. G.— See Su Su 677

Murdoch, H. S.—

See Hazard, C. S42

Murphy, George L .-

A note on the Abraham-Lorentz equation 675

Murphy, J. O .-

Cell sizes at the onset of thermal convection in a fluid layer subject to the influence of rotation and a magnetic field 177

Musgrove, A. R. de L., Allen, B. J., and Macklin, R. L.—

Resonant neutron capture in 139La 599

Musgrove, A. R. de L., Boldeman, J. W., Allen, B. H., Harvey, J. A., and Macklin, R. L.—

High resolution neutron transmission and capture for 91Zr 391

Musgrove, A. R. de L., Harvey, J. A., and Good, W. M.—

Neutron resonance parameters of <sup>90</sup>Zr below 300 keV 379

Nagorcka, B. N., Symons, G. D., Treacy, P. B., and Maclean, I. C.—

12C+16O elastic scattering and total reaction cross sections near the Coulomb barrier 149

Naylor, H.— See White, R. E. 365

Newman, D. J .-

Ligand ordering parameters 315 Nitrogen: optical model and proton elastic scattering from <sup>14</sup>N 287

Nuclear magnetic resonance, single pulse and spin echo, radiative detection of 461

Nuclear physics

Angular correlations in <sup>33</sup>S 23 <sup>35</sup>Ar(β+)<sup>35</sup>Cl decay and anomalous Cabbibo angle 365

<sup>12</sup>C+<sup>16</sup>O elastic scattering and total reaction cross sections near Coulomb barrier 149

Chromium photoneutron cross section 401

Energy dependence of dip in pp elastic scattering 355

Evidence for two-step processes in photonuclear reactions 127

Field theory of particles with arbitrary spin High resolution neutron transmission and capture for 91Zr 391 keV neutron capture by 139La Local and nonlocal potentials for low energy pion-nucleon scattering Neutron resonance parameters of 90Zr below 300 keV 379 Optical model and proton elastic scattering from 14N and 16O Photoneutron cross section of natural osmium 677 Photoproduction of pion pairs at moderate energies 577 Properties of lowest T = 2 state in 24 Mg 407 Resonant neutron capture in 139 La Resonant neutron capture in 45Sc below 100 keV 605 Structure of 12C from α-particle model 361 Study of <sup>11</sup>Be(<sup>3</sup>He, n<sub>0</sub>)<sup>13</sup>N reaction 167 Study of 42Ca(p, 7)43Sc reaction 417 2" states of 8Be 113 Vibrational excitations in even-mass cadmium isotopes 133

Osmium, photoneutron cross section of 677
Oxygen: <sup>12</sup>C+ <sup>16</sup>O elastic scattering and total reaction cross sections near Coulomb barrier 149
Oxygen: optical model and proton elastic scattering from <sup>16</sup>O 287

Planck's law generalization to anisotropic dispersive media 671 Plasma physics

Emission and absorption of Langmuir waves 481 Energy-momentum tensors for dispersive

electromagnetic waves 533 Generalized Ohm's laws for relativistically streaming plasmas 471

Mode coupling in solar corona 495, 647, 661

Poletti, A. R.—
See Southon, J. R. 23
Price, P. B., and Kelly, J. C.—

Channelling of MeV H and He ions in alkali halides at 'zero dose' measurements 617

Radio astronomy
Culgoora-3 list of radio source
measurements \$43
Abstract to \$43 681

Molonglo deep sky survey: I. Declination zone -20° 209 II. Declination zone -62° 231 III. Source counts 241 Observations of HI in bright southern galaxies 187 Optical identifications from Molonglo catalogues MC2 and MC3 S42 Abstract to \$42 681 Parkes 2700 MHz catalogue and new optical identifications: Twelfth part S41 Abstracts to S41 Thirteenth part S44 Abstracts to S44 681 Study of Abell clusters 509 Reddy, D. R. K .-Plane symmetric solutions of a scalar-tensor theory of gravitation Rees, J. A .-See Milloy, H. B. 61 Robertson, A. G .-Drift velocities of low energy electrons in argon at 293 and 90 K

See also Milloy, H. B. 61

Robertson, J. G.—
The Molonglo deep sky survey of radio sources.

I. Declination zone -20 209
II. Declination zone -62 231
III. Source counts 241

Rose, E. K.—
See Clayton, E. 369

Saleem, Mohammad—
See Kamran, Mujahid 355
Sambell, R. H.—
See Su Su 677
Sarma, S. B. S. S., and Sharma, M. C.—
Solar zenith angle dependence of sudden cosmic noise absorptions 531
Savage, Ann—
See Bolton, J. G. S41, S44

Wright, Alan E. S41 Savage, Ann, Wright, Alan E., and Bolton, J. G.—

The Parkes 2700 MHz survey (thirteenth part). Catalogue for declinations  $-15^{\circ}$  to  $-30^{\circ}$ , right ascensions  $10^{h}$  to  $15^{h}$  S44

Abstracts to S44 681 Scandium: resonant neutron capture in <sup>45</sup>Sc below 100 keV 605 Scandium: study of <sup>42</sup>Ca(p, γ)<sup>43</sup>Sc reaction 417 Sharma, M. C.—

See Sarma, S. B. S. S. 531

Shoda, K .--See Weise, Jeanette 401 Simpson, M. A .--See Melrose, D. B. 647 Singh, Punyatma-See Verma, R. L. Slee, O. B .-Culgoora-3 list of radio source measurements \$43 Abstract to \$43 681 Solid state physics Calculated properties of chalcogenide crystals 325 Channelling of MeV H and He ions in alkali halides 617 Ligand ordering parameters 315 Mean square vibration amplitudes in 105 Theory of melting 631, 641 Southon, J. R., Poletti, A. R., and Beale, D. J .-Angular correlation measurements in 335 Spear, R. H., Warner, J. P., Baxter, A. M., Esat, M. T., Fewell, M. P., Hinds, S., Joye, A. M. R., and Kean, D. C .--Vibrational excitations in the even-mass cadmium isotopes 133 Spicer, B. M .-Evidence for two-step processes in photonuclear reactions 127 See also Su Su 677 Stacey, F. D., and Irvine, R. D .-Theory of melting: thermodynamic basis of Lindemann's law 631 A simple dislocation theory of melting 641 Stenhouse, J. E .-See Melrose, D. B. 481 Sulphur: spins and branching and mixing ratios for 33S levels Sun: mode coupling in corona 495, 647, 661 Su Su, Sambell, R. H., Muirhead, E. G., and

The photoneutron cross section of natural osmium 677

Symons, G. D.—

See Nagorcka, B. N. 149

Thakur, K. P.—

Properties of 2: 2 chalcogenide crystals with sodium chloride structure 325

Spicer, B. M .-

Thompson, M. N.—

See Weise, Jeanette 401

Treacy, P. B.—

See Nagorcka, B. N. 149

Tsubota, H.—

See Weise, Jeanette 401

Venkatesan, K.—

See Chandramohan, T. 577

Verma, R. L., and Singh, Punyatma—

The effect of plate oscillations on horizontal free convection flow 333

Warner, J. P .-See Spear, R. H. Watts, R. O .-See Milloy, H. B. 73 Wave equations, numerical calculation of real or complex eigenvalues for Weise, Jeanette, Thompson, M. N., Shoda, K., and Tsubota, H.-The chromium photoneutron cross section 401 White, R. E., and Naylor, H .-The  $^{35}$ Ar( $\beta^+$ ) $^{35}$ Cl decay and the anomalous Cabbibo angle 365 Whiteoak, J. B., and Gardner, F. F. Observations of neutral hydrogen in bright southern galaxies 187

Wilson, G. V. H., Chaplin, D. H., Cooke, P.,
Foster, H. R., and Lynam, P.—
Radiative detection of single-pulse and
spin-echo nuclear magnetic
resonance 461
Wright, Alan E.—

See Savage, Ann S44
Wright, Alan E., Savage, Ann, and
Bolton, J. G.—

The Parkes 2700 MHz survey (twelfth part). Catalogue for declinations  $-45^{\circ}$  to  $-65^{\circ}$ , right ascensions  $22^{\rm h}$  to  $06^{\rm h}$  S41

Abstract to S41 257
Wybourne, B. G., and Bowick, M. J.—
Basic properties of the exceptional Lie
groups 259

Zinc, mean square vibration amplitudes in 105 Zirconium: high resolution neutron transmission and capture for 91Zr 391 Zirconium: neutron resonance parameters of 90Zr below 300 keV 379



